

Appl. No. 09/764,561
Atty. Docket No. 8386
Amdt. dated October 14, 2003
Reply to Office Action of April 14, 2003

REMARKS

Claims 1 - 42 are pending in the present application. Claims 28-40 have been withdrawn from consideration in view of a previous Restriction Requirement for which the Applicants elected an invention with traverse. No additional claim fees are believed necessary.

Claim 1 has been amended to more specifically characterize and define the present invention. Claim 1 has been amended by incorporating the subject matter of Claims 2, 10, 11 and 19.

Claims 2, 10, 11 and 19 have been cancelled in view of their incorporation into Claim 1. Further, Claims 16, 17, 18, 20, 21, 26 and 27 have been cancelled in view of amendments made in Claim 1. Claim 24 has been amended to provide proper antecedent basis for a separate aqueous composition. Claims 22 and 23 have been amended to provide proper claim dependency in view of canceled Claims 19 and 16.

New Claim 43 has been added to the present application. Support for this claim can be found in the specification and claims, as originally filed, as well as the specification on Page 28, second paragraph.

It is believed these changes do not involve any introduction of new matter. Consequently, entry of these changes is believed to be in order and is respectfully requested. Any additional claims fee due as a result of these amendments is charged to the Assignee's Deposit Account via the attached cover sheet.

Invention Synopsis

The present invention discloses a treatment composition comprising a liquid emulsifiable concentrate of a reactive agent comprising, by weight from about 0.01% to about 20% of one or more reactive agents wherein the reactive agent is comprised of one or more reactive groups of the electrophilic, nucleophilic or protected thiol type; from about 20% to about 99% of a water immiscible solvent; and from about 2 to about 40% of a surfactant selected from one or more of a C₈-C₁₆ alkyl ethoxylate with two to seven ethoxylates; and from about 0.5% to about 20% of a dispersing aide selected from one or more of a C₅-C₁₀ alcohol.

While not being bound to theory, it is believed that such low energy emulsification with minimal or no agitation by the consumer, e.g., by soft shaking of bottle or suitable container, is achieved via inclusion of specialized surfactants and/or dispersing aides within the liquid

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concentrate that achieve either ultra-low interfacial tension and/or substantial interfacial disruption between the liquid concentrate and the aqueous phase upon dilution with water or a separately packaged aqueous composition.

Surprisingly, it has been discovered that the liquid emulsifiable concentrates of the present invention can achieve self emulsification even upon addition to a substantially thickened aqueous composition to produce a resulting homogenous and viscous emulsion with minimal agitation by the consumer, e.g., via gentle shaking of the bottle or suitable container. This is in marked contrast to conventional thickened emulsions which necessitate considerable energy input that can only be attained by employing high energy processing equipment within a laboratory or a manufacturing plant, e.g., a lightning mixer or agitated vessel. Accordingly, the liquid emulsifiable concentrates of the present invention enable isolation upon storage for acceptable chemical shelf stability while still enabling emulsion delivery with minimal inconvenience to the consumer.

Art Rejections

35 U.S.C. § 103(a)

Claims 1-27, 41 and 42 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Gough et al, U.S. 5,525,332, collectively "Gough", and Deppert et al, U.S. Patent 5,087,733, collectively "Deppert". The Examiner has asserted that one of ordinary skill in the cosmetic art would have been motivated to incorporate the polymer of Deppert into the emulsions of Gough, in order to achieve similar conditioning results. Applicants respectfully traverse this rejection.

Gough discloses a cosmetic composition, especially for providing a conditioning benefit to hair, incorporating an azalactone-functionalized copolymer consisting of vinyl azalactone and methacryloyl polymethylsiloxane monomers. Gough teaches preferred azalactone functionalized materials which are water soluble or soluble in water/alcohol, to enable compositions to be prepared as aqueous or aqueous/alcoholic solutions or emulsions. (Column 7, lines 49-54) or alternatively, the active materials may be soluble/dispersible in organic solvents only, e.g., alcohols, hydrocarbons, etc. to make them particularly suitable for formulation into mousse- or spray-type products (Column 7, lines 60-64). As the Examiner has kindly pointed out, Gough is silent as to a nucleophilic reactive group of thiol type reactive agents, as taught in the present invention.

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Deppert discloses processes for conditioning human hair by treatment with selected sulfur containing quaternary ammonium compounds, compositions useful for such processes and novel quaternary compounds useful for the processes.

As now amended, the present invention discloses and claims the combination of a specific surfactant system comprising the combination of a C₈-C₁₆ alkyl ethoxylate with two to seven ethoxylates with a dispersing aide selected from one or more of a C₅-C₁₀ alcohol. In the present invention, it has been surprising found that this specific surfactant system enables the anhydrous liquid emulsifiable concentrate achieve the low interfacial tension self/spontaneous emulsification. Such low energy emulsification with minimal or no agitation by the consumer, e.g., by soft shaking of bottle or suitable container, is achieved via inclusion of specialized surfactants system with the specified dispersing aide within the liquid concentrate that achieve either ultra-low interfacial tension and/or substantial interfacial disruption between the liquid concentrate and the aqueous phase upon dilution with water or a separately packaged aqueous composition.

Surprisingly, it has been discovered that the liquid emulsifiable concentrates of the present invention can achieve self emulsification even upon addition to a substantially thickened aqueous composition to produce a resulting homogenous and viscous emulsion with minimal agitation by the consumer, e.g., via gentle shaking of the bottle or suitable container. This is in marked contrast to conventional thickened emulsions which necessitate considerable energy input that can only be attained by employing high energy processing equipment within a laboratory or a manufacturing plant, e.g., a lightning mixer or agitated vessel. Accordingly, the liquid emulsifiable concentrates of the present invention enable isolation upon storage for acceptable chemical shelf stability while still enabling emulsion delivery with minimal inconvenience to the consumer.

Conventional surfactant systems, as disclosed in both Gough et al and Deppert will not enable such low ultra-low interfacial tensions required for such low energy emulsification by the consumer. Both Gough and Deppert are silent with regard to the specific surfactant system comprising the combination of a C₈-C₁₆ alkyl ethoxylate with two to seven ethoxylates with a dispersing aide selected from one or more of a C₅-C₁₀ alcohol, which is required by the present invention, as now amended.

In order to establish a prima facie case of obviousness, the Examiner must show that (1) there is some suggestion or motivation, either in the references themselves or in the knowledge

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generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings, (2) there is a reasonable expectation of success, and (3) all of the limitations of the claims are taught or suggested in the prior art (M.P.E.P. § 2143). First, none of the references establish a *prima facie* case of obviousness because they do not teach or suggest all of Applicants' claim limitations. In the present case, and with respect to Claims 1-27, 41 and 42, neither of the references teach the use of the specific surfactant system comprising the combination of a C₈-C₁₆ alkyl ethoxylate with two to seven ethoxylates with a dispersing aide selected from one or more of a C₅-C₁₀ alcohol, as required in Claim 1.

Secondly, the Examiner has not provided the requisite motivation to modify either the Gough reference or Deppert reference so as to obtain Applicants' invention. Unlike Applicants invention, none of the references recognize the problem for which the present invention has solved i.e., the need for a specific surfactant system which enable the anhydrous liquid emulsifiable concentrate to achieve the low interfacial tension self/spontaneous emulsification. Thus, the references do not recognize the liquid emulsifiable concentrates of the present invention which enable isolation upon storage for acceptable chemical shelf stability while still enabling emulsion delivery with minimal inconvenience to the. Applicants disclose a specified surfactant system wherein Applicants recognize the interactions of the components of such a system.

There is no description in any of the references regarding the relationship between the combination of these specific materials of the present invention and the benefit of providing a solution to the problem for which the present invention has solved. Thus there is no motivation in the Gough et al reference to combine it with the Deppert reference and arrive at the benefit of the present invention. Further, there is no motivation in Gough to look to the the teachings of Deppert and arrive at the unexpected benefit of the present invention.

In summary, neither Gough et al nor Deppert establish a *prima facie* case of obviousness because all of the limitations of the claims are not taught or suggested in the prior art. Namely, none of the prior art teaches a specified surfactant system, including the specific dispersing aid of Claim 1, in the present invention. Secondly, there is no suggestion or motivation to modify the references, as none of the references, either alone or in combination, recognize the problem which the present invention has solved i.e. low energy emulsification with minimal or no agitation by the consumer. Therefore, Applicants' contend that the claimed invention is unobvious and that the rejection should be withdrawn.

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Conclusion

In light of the above remarks, it is requested that the Examiner reconsider and withdraw the rejection under 35 U.S.C 103(a). Early and favorable action in the case is respectfully requested.

Applicants have made an earnest effort to place their application in proper form and to distinguish the invention as now claimed from the applied references. In view of the foregoing, Applicants respectfully request reconsideration of this application, entry of the amendments presented herein, withdrawal of the rejections under 35 U.S.C § 103, and allowance of Claims 1-27, 41 and 42.

Respectfully submitted,

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